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CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 30 August 1999 with an application for Letters Patent number 337475 made by STUART EARL CRISPIN MILLER.

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Dated 6 September 2000.

Neville Harris
Commissioner of Patents



Patents Form No. 4

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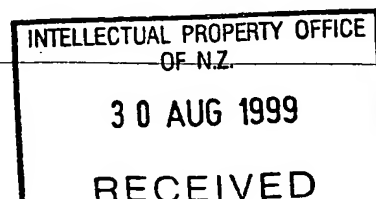
James & Wells ref: 40838

Patents Act 1953

PROVISIONAL SPECIFICATION

ADJUSTABLE ELEVATING TOILET SEAT

I, Stuart Earl Crispin Miller, a New Zealand citizen of 485 Manchester Street, Christchurch,
New Zealand, do hereby declare this invention to be described in the following statement:



TECHNICAL FIELD

The present invention relates to a height-adjustable toilet seat for use by the elderly or handicapped as well as the able bodied.

BACKGROUND ART

Toilet seats are typically formed to a fixed height. Such a height is suitable for the physically able, but not suitable for those with limited mobility. Toilet fixtures of a enlarged or elongated bowl are known, thus disposing the seat at a height higher than normal to reduce the distance a person must lower themselves. However, such higher seats are generally of a less convenient height for mobile persons, or for children in the same household.

Toilet seats in which the base is higher than normal, or in some way elevated, are also known. However, these are normally of a fixed height. Thus, they are again inconvenient for able bodied users.

Removable inserts for seats are also known. In such instances the insert sits on or over the toilet bowl, generally placed in position by insertion into the bowl itself. This has the disadvantages of, firstly, being in the way of the flushing action of the toilet. Secondly, the arrangement does not allow for easy self cleaning of the insert (as is the case with the toilet bowl when it is flushed). Thirdly, whilst the insert can be easily removed, there is no sanitary place for it to be kept, where it is handy for further use, adjacent the toilet.

Toilets with adjustable heights or side rails are known. An example can be seen in US Patent No. 4631759, with the use of side rails and an adjustable grip. US Patent No 5031251

discloses a mechanism connected to the bowl for raising and lowering the rim portion. However the plumbing either needs to be extended for these arrangements or standard toilet seats are required to be modified.

A further disadvantage of some types of arrangements is that they are not easily operated by the disabled or handicapped person wishing to use the toilet.

A still further disadvantage of the above types of seats or toilets with seats is that the upper, elevated position is not adjustable, from user to user.

It is an object of the present invention to provide an adjustable toilet seat the height of which may be varied from the normal height to one of a plurality of elevated positions.

It is a further object of the present invention to address the foregoing problems or at least to provide the public with a useful choice.

Further aspects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

DISCLOSURE OF INVENTION

According to one aspect of the present invention there is provided a height adjustable toilet seat for use with a standard toilet bowl, said seat including:

- (a) a known toilet seat;
- (b) a framework capable of supporting said seat, said framework being shaped to fit about or around the top of the bowl, and said framework including:
 - (i) clamping means for releasably securing said framework about the outside of

the toilet bowl;

(ii) a frame which supports said seat; and

(iii) a plurality of telescoping legs spaced around said bowl, said legs contained partially within cylindrical holders and each said leg and holder including a plurality of stops for arresting and releasably retaining said leg at one or more points along the height of the leg, said holders being secured to said clamping means, said legs being secured to said frame and said holders being secured to said clamping means; and

(c) hinging means for releasably securing the seat to the framework.

According to another aspect of the present invention there is provided a height adjustable toilet seat as described above, which seat further includes a shaped insert which fits within the framework such that the base of the insert rests on the inner top of the bowl and is supported at the top by the framework.

Preferably, in either aspect of the present invention, the number of legs and holders is selected from three or four. Preferably, said hinging means also releasably secures a lid for the seat to the framework.

According to another aspect of the present invention, there is provided a height adjustable toilet seat as described above, in which said seat further includes means to heat said seat.

Preferably, said insert is of plastics material, fibreglass or metal; and said framework is of steel.

BRIEF DESCRIPTION OF DRAWINGS

Further aspects of the present invention will become apparent from the following description which is given by way of example only, and with reference to the accompanying drawings in which:

Figure 1 is a side view of the preferred embodiment of the seat of the present invention in an extended position, with a toilet in outline only;

Figure 2 is a side view of the preferred embodiment of the seat of the present invention in a lowered position;

Figure 3 is a front view of the preferred embodiment of the present invention in the same position as in Fig. 1;

Figure 4 is a front view of the preferred embodiment of the present invention in the same position as in Fig. 2;

Figure 5 is a back view of the preferred embodiment of the present invention in the same position as in Fig. 1;

Figure 6 is a back view of the preferred embodiment of the present invention in the same position as in Fig. 2;

Figure 7 is a side view of the insert of the preferred embodiment of the present invention; and

Figure 8 is a perspective view from above of the insert of the preferred embodiment of the present invention;

Figure 9 is a plan view of the insert of the preferred embodiment of the present

invention, showing a heater.

BEST MODES FOR CARRYING OUT THE INVENTION

Referring to Figs 1 to 6, a toilet seat 2, which is capable of height adjustment to a plurality of positions, is thereshown. The toilet seat 2 includes a hinged seat component 3 (of known type), a clamping band 4, four telescoping legs 5, each leg 5 being within a holder 6, and a seat frame 11 (as best shown in Figs 1 and 2).

The toilet seat 2 is associated with a standard bowl 7 (Figs 1, 3, and 5) which has a base 8 and in-turned, top edge 9. The plumbing and arrangement of the bowl 7, the base 8, and the top edge 9 are all of known type. The toilet seat 2 further includes a hinged lid (not shown), securable to the frame 11 at the back thereof. The hinged securement is of the same type as is known for securement of a hinged seat cover to a known toilet seat.

The clamping band 4 is a metal band, of known type, which is clamped about the top edge 9. The seat frame 11 is also a metal band of the same general shape and type as the clamping band 4. Preferably these two components, the clamping band 4 and the seat frame 11, sit together in complementary manner when the seat is in the lowered position (of Figs 2, 4 and

6). If so desired, an additional brace 22 (Figs 5 and 6) across the back of the toilet may be added to the clamping band 4. Such a brace, if used in conjunction with the clamping band 4, may be secured by use of the existing bolt holes (for securement of the lid to the bowl).

Referring to Figs 1, 3 and 5, each leg 5, which is capable of sliding within the respective holder 6, is secured at the top thereof to the seat frame 11. The respective holder 6 is secured to the clamping band 4 by a rigid flange 12. Optionally the flange 12 includes an additional

shoulder 13 at the top to further locate the top of the respective holder 6.

Referring to Figs 1 to 4, each holder 6 incorporates a plurality of holes 14 evenly spaced along the height thereof. The respective leg 5 includes a spring loaded pin 15 capable of locating in and through each hole 14 depending on the height of the leg 5 relative to the holes 14.

Each leg 5 and holder 6 are shown in these drawings as being four in number and evenly spaced about the bowl 7. However, it will be appreciated that there may be three sets of leg 5 and respective holder 6, with one set positioned at the front of the bowl 7, and two adjacent the rear of the bowl 7, one on each side thereof.

It will be appreciated that with appropriate fitting and turning and a good shape to the end of the pins 15, the legs 5 may be moved from position to position with ease, whilst at the same time locating and locking the height of the seat 2, until adjustment is again required.

For example, the pins 15 may be spring loaded ball bearings, if so desired.

Thus a disabled person may be able to adjust the height of the seat 2 with comparative ease, but also be assured that the seat 2 will remain at the chosen height until further adjustment to the legs 5 is made.

Referring to Figs 1 and 7 to 9, an insert 16 is thereshown. The insert 16 includes a top flange 17 which is capable of being supported by the seat frame 11. The bottom 19 and the sides 18 of the insert 16 are of an external cross-section that is complementary to the internal cross-section of the top 9 of the bowl 7. The sides 18 are otherwise straight.

The top flange 17 further includes a heating coil 21 of known type within the body of the flange 17. The insertion and arrangement of the heating coil 21 can be fashioned in known

manner. The coil 21 is connected electrically to a thermostat and on/off controls 20 (Fig. 8), in known manner. Thus, with a known 100 watt heating coil 21, extra low voltage and a known transformer (not shown), the heating coil 21 may be left on thermostatic control.

The above described toilet seat 2 operates as follows:

The seat 2 starts in the lower position (Fig 2, 4 and 6). In this position any insert 16 is either removed or within the bowl 7, depending on the shape and size of the insert 16. The lid is closed in normal manner. The legs 5 are fully encased within the respective holder 6, with the pin 15 in the lowermost hole 14 (Fig. 4).

The seat 2 is raised to an elevated position by pressing in one or more of the pins 15 and pulling the frame 11 and the seat 2 in an upward direction. The release of the pins 15 allows the legs 5 to slide in an upward direction until the pins 15 engage with a hole 14 in a higher position on each respective holder 6. Once all the pins 15 are engaged, the seat 2 is retained in an elevated position. Depending on the height selected, the insert 16 either sits on top of or within the bowl 7. The insert 16 can thus be easily removed for cleaning.

As the lid is hinged to the frame 11, the lid also moves up with the seat 2. The lid can be opened in standard manner, and the insert 16 placed so that the top flange 17 rests on the seat frame 11.

It will be appreciated by those skilled in the art, that with a plurality of holes 14, the height to which the toilet seat 2 is raised can be selected to suit the user.

Also, it will be appreciated that the shape of the insert 16 may be adapted so that the insert 16 can remain permanently a part of the seat 2, if so desired.

The insert 16 may be of any appropriate material that is easy to keep clean, and with an

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aesthetically pleasing surface finish. For example the material of the insert 16 may be selected from: plastics materials, fibreglass, metal, and wood, or any combination thereof.

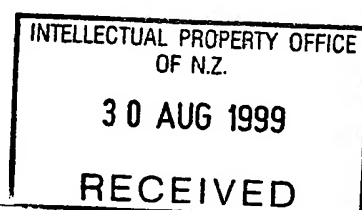
It will further be appreciated that the clamping band 4 can be secured releasably about the bowl 7. Thus, should the height adjustment no longer be needed the seat 2 can be removed.

A seat and lid of standard type can be re-secured to the bolt holes on the standard toilet bowl 7, in known manner, once the seat 2 of the present invention is no longer needed on a longer term basis.

Whilst the above described seat 2 has been described with reference to the addition of an insert 16, it will be appreciated that this may be omitted, if so desired. Similarly, if so desired, the heater coil 21 and associated thermostat 20 may be omitted.

Also, it will be appreciated that whilst the invention is described with reference to a fixed, standard type of toilet, the seat 2 may be adapted to fit a commode or other type of portable toilet with a bowl. As an addition to (or as an alternative to) the heating coil 21 in the top flange 17 of the insert 16, the heating coil 21 may be inserted in the conventional seat 3, as is desired.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.



STUART EARL CRISPIN MILLER

by his authorised agents

JAMES & WELLS

per:

A handwritten signature in dark ink, appearing to read "Stuart Miller", written over a horizontal line.

FIG. 1

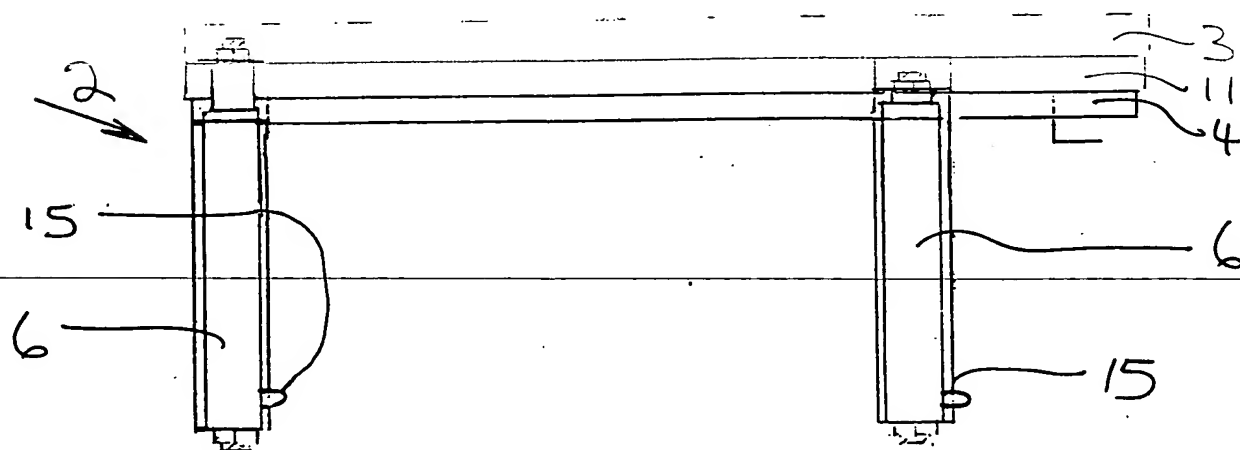
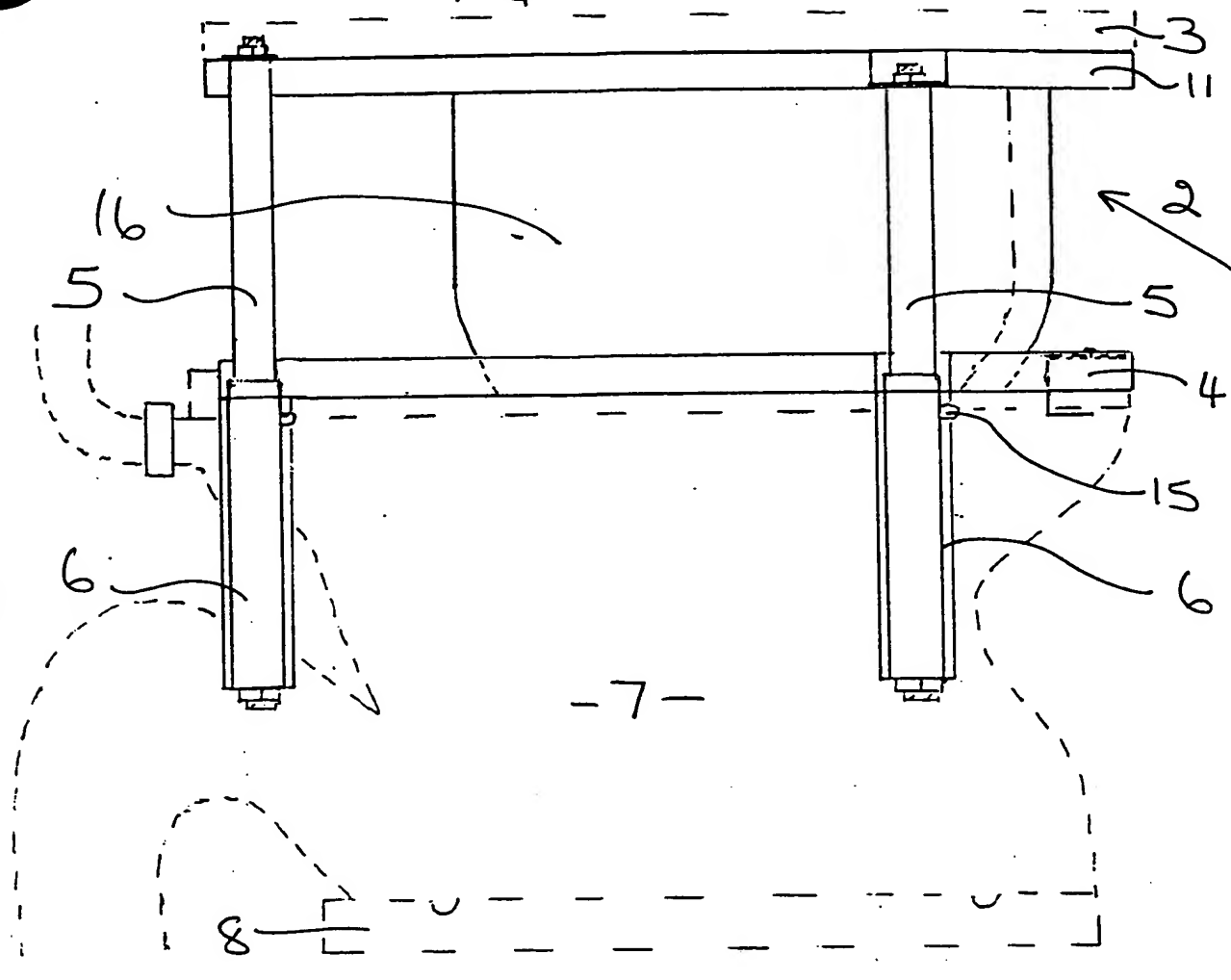


FIG. 2

A hand-drawn schematic diagram of a mechanical assembly, likely a frame or support structure. The diagram includes the following labeled components:

- 1**: A horizontal beam at the top of the structure.
- 2**: An arrow pointing to the right, indicating a direction of force or movement.
- 3**: A dashed line indicating a boundary or a specific section of the assembly.
- 4**: A vertical support post on the left side, featuring a series of circular holes.
- 7**: A dashed outline at the bottom, possibly representing a base or a footprint.
- 8**: A dashed line within the base area, indicating a specific feature or section.
- 11**: A vertical support post on the right side, similar to post 4.
- 12**: A vertical support post on the right side, featuring a series of circular holes.
- 13**: A horizontal beam at the bottom of the structure.
- 14**: A vertical support post on the right side, featuring a series of circular holes.
- 15**: A vertical support post on the left side, featuring a series of circular holes.

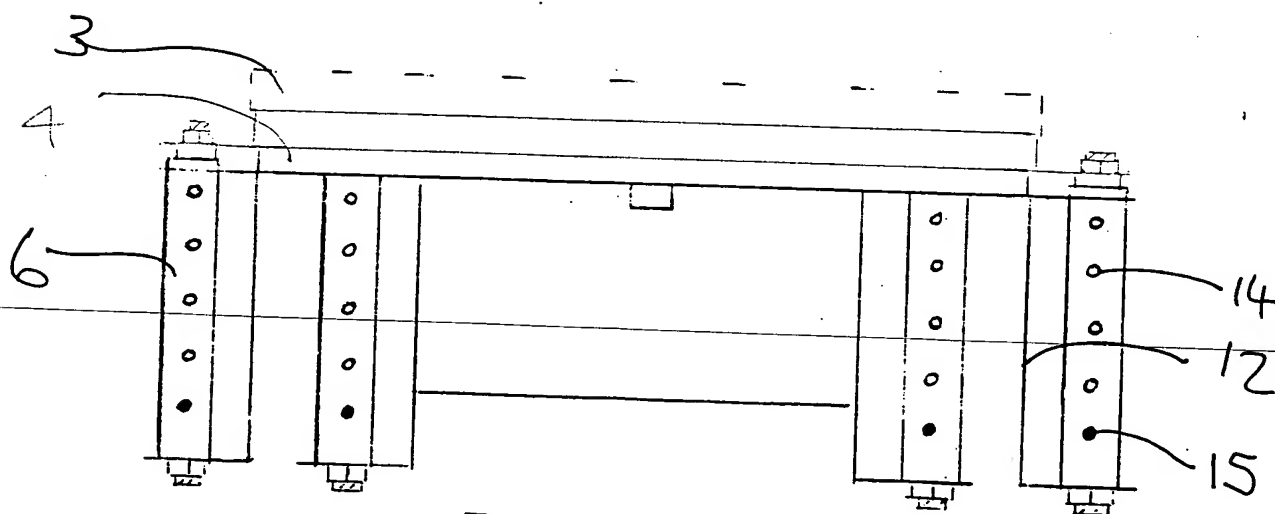


FIG 4

FIG. 5

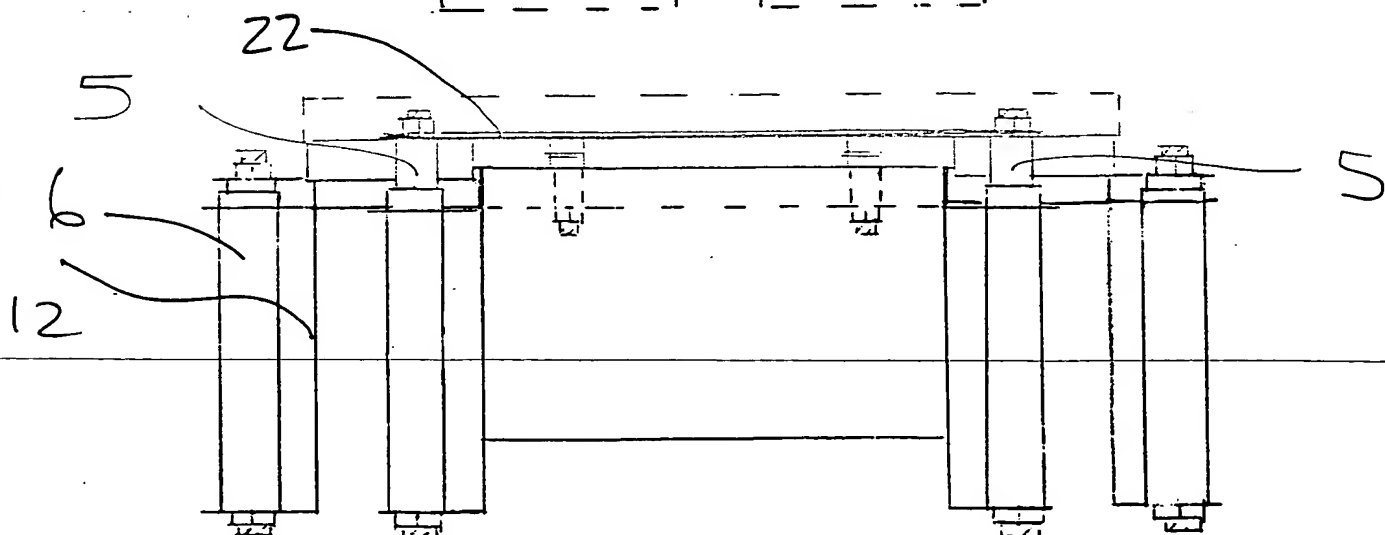
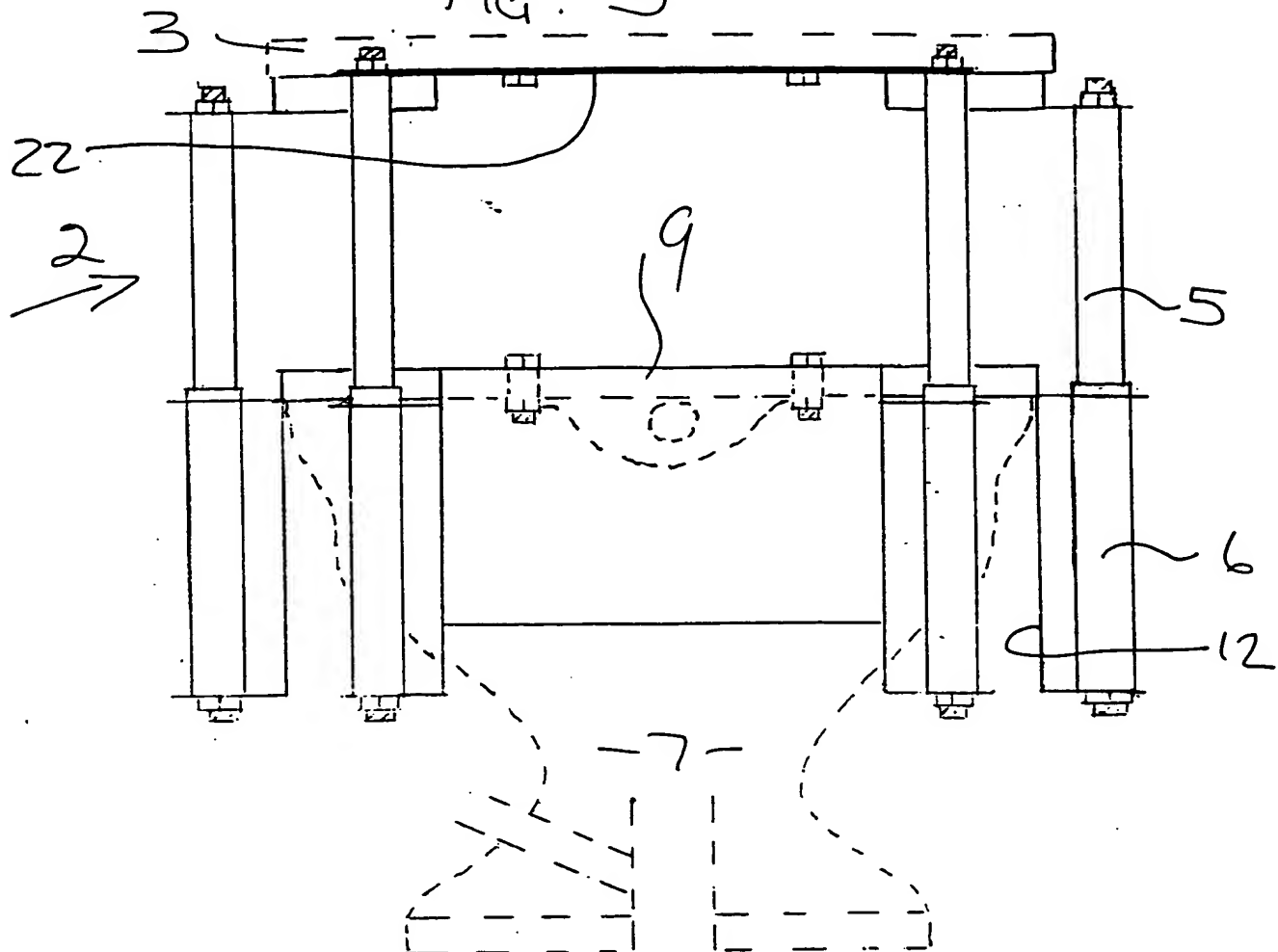


FIG 6

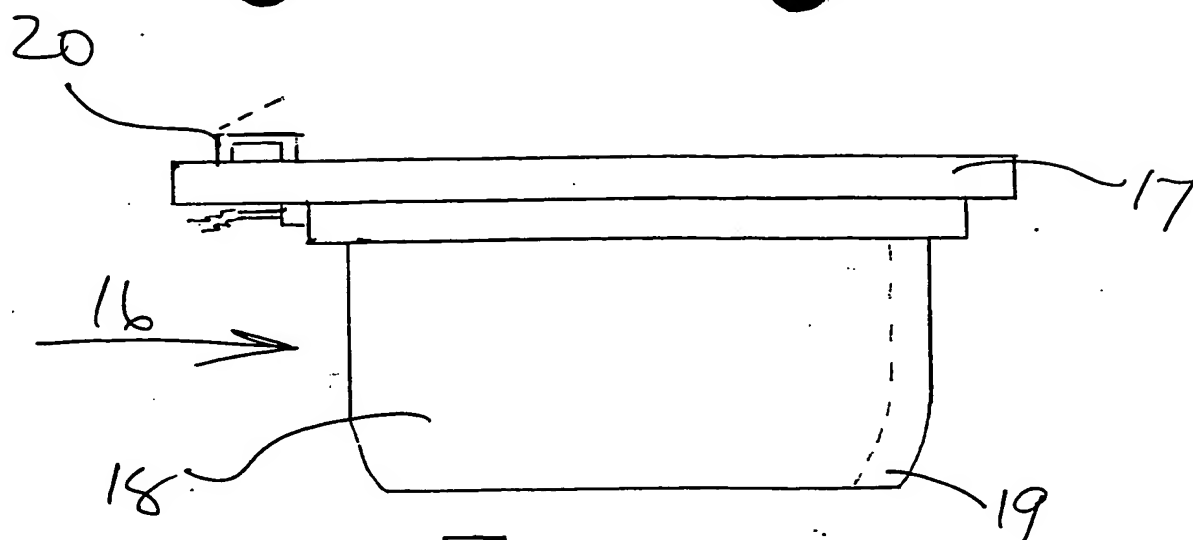


FIG 7

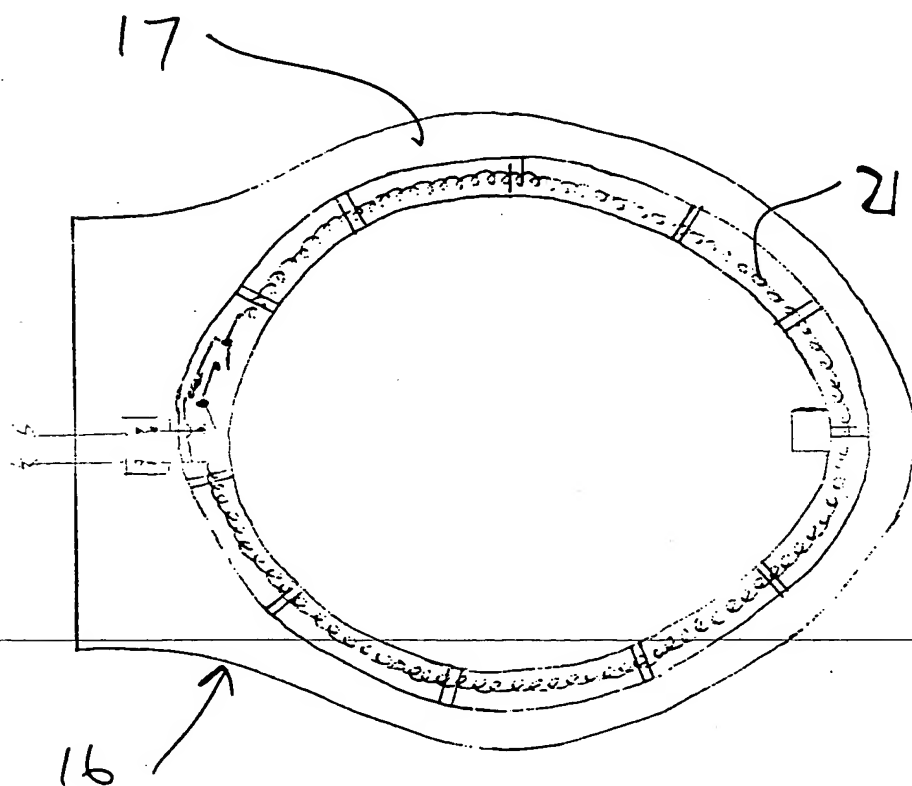
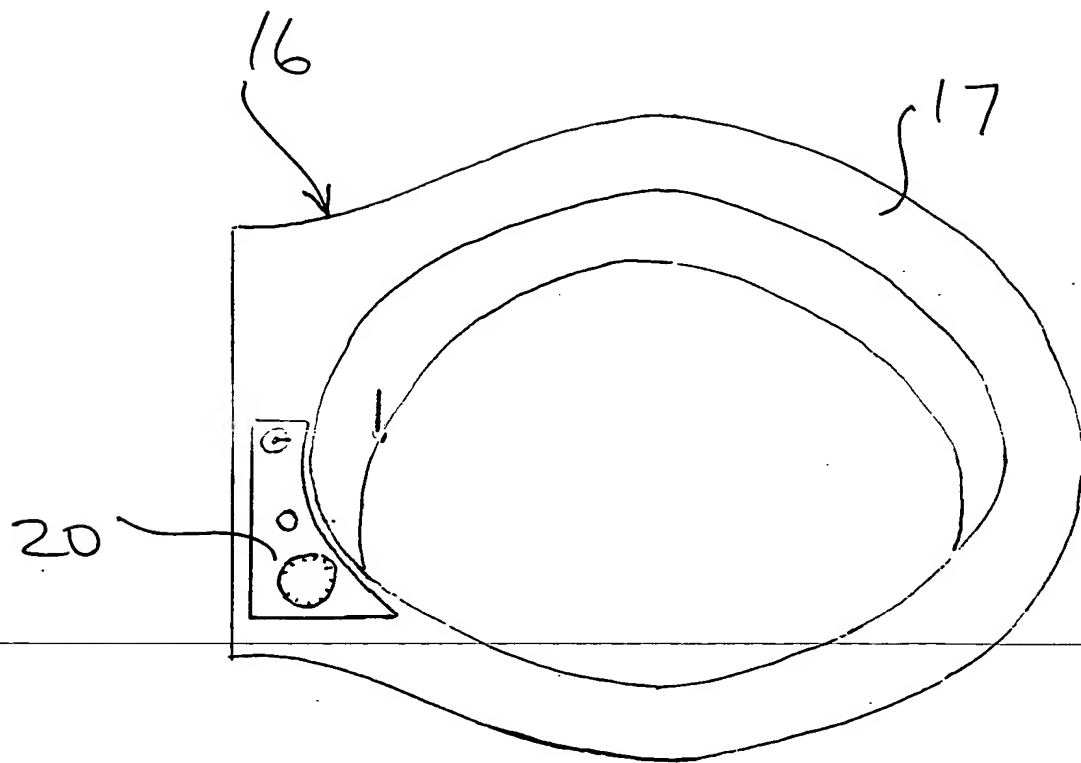


FIG 9.

FIG 8.



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